



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,552	10/31/2001	Ali Bani-Hashemi	2000P09022US01	7658

7590

03/03/2006

Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, NJ 08830

EXAMINER

PATEL, SHEFALI D

ART UNIT	PAPER NUMBER
----------	--------------

2621

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/001,552	BANI-HASHEMI ET AL.	
	Examiner	Art Unit	
	Shefali D. Patel	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-8, 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5 December 2005 has been entered.

Response to Amendment

2. The amendment (along with RCE) was filed on 5 December 2005.
3. Claims 6, 9 and 19 have been cancelled.

Response to Arguments

4. Applicants' arguments filed on 5 December 2005 (Remarks on pages 7-9) have been fully considered but they are not persuasive.

Applicants' argue on page 7 stating "Cosman does not disclose or suggest that the illumination source (16) is controlled in any manner to illuminate a target point in a real scene based on a selected target point in a displayed digital image of the real scene which is captured by cameras...the Examiner seems to ignore Cosman's express teachings that the light source (16) may not always be needed and that the light source (16) is simply used to enhance the SNR (signal to noise ratio) of reflected light from the index markers as related to the background."

The examiner respectfully disagrees.

The light source 16 is controlled by the camera system C, col. 4 lines 13-14 and 17-20 where "a light source 16 illuminates the target point" (emphasis added by the examiner). The examiner clearly does not ignore Cosman's express teachings at col. 4 lines 25-34. Cosman states, "the light source 16 may not always be needed..." meaning, it is used at some point; the some point being to enhance the

Art Unit: 2621

SNR. Furthermore, notice the illumination system 115 used in Figure 6 and disclosed at col. 12 line 42. The illumination system 115 projects a grid of light onto the patient P. In the same device the camera system C3 (same as the camera system C in Figure 1 has a cast light for illumination (projection) purpose, col. 12 lines 62-65.

Applicants state on page 8, "the Examiner contends in the Advisory Action that Cosman discloses...the process of projecting a light beam at target points...Examiner's reliance on the cited section (col. 8 lines 32-43) is wholly misplaced, as there is nothing in the cited section that supports the Examiner's contention." The examiner agrees. The examiner was correct in stating what she stated in an Advisory Action except the citation section of col. 8 lines 32-43. The examiner meant to cite col. 12 lines 42-48 instead of col. 8 lines 32-42 on page 2 (line 13) of the Advisory Action.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 7-8 and 10-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Cosman (US 6,405,072).

With regard to claim 1 Cosman discloses a method for illuminating a target point in a real scene (Figures 1 and 4), comprising the steps of: capturing a digital image of a scene (capturing a digital image by the camera system C comprising cameras 17, 18, and 19 as seen in Fig. 1 and at col. 4 lines 13-25, col. 10 lines 59-65); identifying image coordinates of a target point in the digital image of the scene (marker locations on the patient P, col. 3 lines 29-46, col. 4 line 48 to col. 5 line 1, col. 5 lines 36-45, line 59 to

Art Unit: 2621

col. 6 lines 1-11); wherein identifying comprises: displaying the digital image of the scene (display 39 in Figure 1, col. 4 lines 58-61, col. 5 line 32); and selecting a target point in the displayed image of the scene (col. 6 lines 45-49); and determining image data coordinates corresponding to the selected target point (col. 8 lines 32-43); and projecting a light beam at a target point in the real scene, which corresponds to the selected target point in the displayed digital image, using the identified image coordinates (light source 16, Figure 1; light from the sources 17B and 18B at col. 7 lines 61-64 in Figure 2; an illumination system 115 projecting light, col. 12 lines 42-48 and lines 62-65, Figure 6).

With regard to **claim 2** Cosman discloses converting the image coordinates of the target point to light coordinates for directing the light beam; and processing the light coordinates to direct the light beam to the target point in the real scene (col. 12 lines 13-25 and col. 16 lines 20-31).

With regard to **claim 3** Cosman discloses an optical device at 34 in Figure 1. See, col. 5 lines 8-10 and col. 10 lines 36-49.

With regard to **claim 4** Cosman discloses laser beam throughout the inventions. See, col. 7 lines 37-41, col. 12 lines 62-65, col. 16 lines 51-54, and col. 19 lines 1-15 for lasers 160, 161, and 162.

Claim 7 recites identical features as claim 1 except claim 7 is a program storage device claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 7. Applicants' attention is further invited to the treatment processing system "T" as seen in Figure 1 and at col. 3 lines 32-34 for program storage device; and, the storage memory in the imager 35, col. 6 lines 4-12.

Claim 8 recites identical features as claim 2. Thus, arguments similar to that presented above for claim 2 is equally applicable to claim 8.

Claim 10 recites identical features as claim 1 except claim 10 is a system claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 10. Applicants' attention is further invited to Figures 1-2 and 4-8 for devices disclosed by Cosman.

With regard to **claim 11** Cosman discloses having common properties between the capture device (i.e., the camera) and the illumination device throughout the invention by discloses having common coordinates with respect to the patient P's body and the couch on which the patient is. See, col. 3 lines 29-46, for example.

Claim 12 recites identical features as claim 3. Thus, arguments similar to that presented above for claim 3 is equally applicable to claim 12.

With regard to **claim 13** Cosman discloses illuminating device including a light-emitting plane at col. 12 lines 42-46.

With regard to **claim 14** Cosman discloses activating a point source in the light-emitting plane that corresponds to a projection of the target point on the light-emitting plane (col. 11 lines 1-5, col. 12 lines 42-46).

Claim 15 recites identical features as claim 4. Thus, arguments similar to that presented above for claim 4 is equally applicable to claim 15.

With regard to **claim 16** Cosman discloses a laser beam generator (light source at col. 7 lines 53-61 and laser beam at col. 19 lines 4-9); a deflector for deflecting the laser beam emitted from the laser beam generator (17B/C and 18B/c at col. 7 lines 61-64 and also see col. 20 lines 38-44 with respect to the laser beams); a plurality of motors, operatively connected to the deflector, for positioning the deflector to deflect the laser beam to the target point (motor system 151 in order to position the couch so that the deflector and the target point is positioned correctly at col. 16 lines 27-39, Figure 8).

With regard to **claim 17** Cosman discloses generating control signals to control the plurality of motors to position the deflector at an appropriate angle (col. 5 lines 25-37).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2621

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman.

With regard to **claim 11** it would have been obvious matter of design choice to modify Cosman's reference by having common optical properties between image capture device and illumination device since applicant has not discloses that having common optical properties solves any stated problem or is for any particular purpose and it appears that the Cosman discloses both image capture device and an illumination device to have common optical properties because Cosman does not discloses having not common properties, see col. 3 lines 29-46. Cosman's system as seen in Figures 1-2 and 4-8 would perform equally well with having common optical properties.

9. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman in view of Kuban et al. (hereinafter, "Kuban") (US 5,359,363).

With regard to **claim 5** Cosman discloses a camera that captures an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Cosman does not expressly disclose having an omni-directional camera. Kuban discloses omni-directional camera at element 32 Figure 6, col. 9 lines 28-43. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Kuban with Cosman. The motivation for doing so is to determine the locations of x and y in the imaging array and by doing this one can transform an image from the input video buffer to the output video buffer exactly as suggested by Kuban at col. 8 lines 40-57. Therefore, it would have been obvious to combine Kuban with Cosman to obtain the invention as specified in claim 5.

Art Unit: 2621

Claim 18 recites identical features as claim 5. Thus, arguments similar to that presented above for claim 5 is equally applicable to claim 18.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D. Patel whose telephone number is 571-272-7396. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Shefali D. Patel
Examiner
Art Unit 2621

15 February 2006


JINGGE WU
PRIMARY EXAMINER